135 (2) The Supply of Raw Materials and Power: Iraq is potentially
233 rich in many kinds of raw materials. In the first place it has abun-
241 dant supplies of oil and gas which provide a cheap source of both
433 raw material and fuel. Secondly, it has pastoral and agricultural products such as wool, camel hair, hides and skins, meat, fish, milk, animal fat. Thirdly, it has fertile land which, with the extension of irrigation, can be a rich source of such raw materials as sugar beets, sugar cane, soybeans and jute, in addition to products already available such as tobacco, cotton, sesame, linseed, and practically all types of grain, fruits and vegetables. Finally, recent geological surveys have located outcrops of iron, copper, zinc and chrome ores. There are deposits of sulphurs, apparently of commercial value, in many parts of Iraq, and of salt, especially near Basrah. Yet each of these resources presents a different problem; none is easily exploitable (except oil); quantities available for industry are limited and the quality frequently poor. Agriculture has been kept at a low level of output because of the lack of irrigation schemes in most parts of the country; the difficulties caused by the present land tenure system and the agricultural techniques connected with the tribal system, which covers over 80 per cent of the cultivated area; the absence of an effective agricultural extension service and lack of modern storing facilities; these and other factors have held back both quantity and quality of agricultural and animal products. There was a noticeable extension in the cultivation of cotton in recent years, but the severe failure of the crop in 1951, owing to a pest attack, has been a great set-back. Difficulties in the supply of raw materials have held up many an industrial enterprise. The scheme for a sugar factory which has been under discussion since 1947 has had to be postponed from one year to another owing to the uncertainties connected with the
[231] cultivation of both sugar beet and sugar cane. The progress of the leather tanning industry, one of the oldest industries in Iraq, has been retarded due to the existing conditions in which hides and skins have been prepared and preserved, and great losses to this particularly native industry have resulted. The woollen textile
[289] mills have had to import certain qualities of Australian wool to mix with Iraqi wool which is of a coarse variety.

135 So far as mineral resources are concerned the surveys that have been made are insufficient.[1] Further exploration work is

1 As of writing, in July 1953.

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all of Iraq's anticipated requirements for some time. This decision reflects an understandable desire on the part of Iraq to have a modern refinery of its own, replacing the somewhat inadequate and rather old Alwand refinery at Khanaqin which is owned by a subsidiary of the Anglo-Iranian Oil Company and is capable of supplying not quite 70 percent of Iraq's current requirements.[3] Foreign management of the new refinery will probably be necessary, at least for an initial period. The project will make it necessary to close the Alwand refinery and probably also the small oil field near the Iranian border from which it draws its crude. This field probably cannot be developed on a scale large enough to warrant investment in the pipelines necessary to export the oil.

Expansion of Old Industries

Some industries are now expanding without government financial assistance. The cement plant and the brewery are both doubling their capacity. Recent improvements and expansion have put the woolen industry abreast of the country's needs. Other industries do not for the present require expansion. Flour milling capacity, for instance, appears ample. The tanneries also appear to have sufficient capacity, but to raise the quality of their raw material supply, technical assistance is needed to improve methods of flaying and preserving hides.

Still other industries could usefully be expanded but do not have sufficient financial resources to do so without government assistance. The cotton and rayon textile factories in Baghdad and Mosul might well double their designed capacity and extend their facilities to make a wider range of products. At present cotton textile capacity can meet only about a quarter of the country's requirements. Since ample raw material is available and costs of production can become competitive with those abroad, further expansion would appear to be warranted. In its regular budget for 1951-52 the government has provided ID 1,000,000 for a government textile mill. The Mission believes, however, that government ownership and operation would not be desirable and that it would be vastly preferable to extend capacity with the participation of private capital and enterprise.

[3] By an agreement reached in December, 1951, the government took over ownership of the refinery, retaining the AIOC subsidiary provisionally as its operating agent.

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By and large this new partnership between the oil companies and the government should prove mutually beneficial.

The Government for several years has been considering the building of a modern oil refinery near Baghdad. In recent months, final plans were formulated and arrangements for its construction have apparently been made. This refinery, estimated to cost at least ID 7,000,000, is designed for an annual capacity of approximately 1,000,000 tons and when completed should be able to supply all of Iraq's anticipated requirements for refined petroleum products except for certain specialties.

The project will probably make it necessary to close the Alwand refinery, owned until recently by a subsidiary of the Anglo-Iranian Oil Company,[1] now producing something less than 70 percent of Iraq's requirements. Likewise, the use of Kirkuk crude, which can be obtained by the Government at cost, will probably make it necessary to close down the small oil field near Khanaqin which supplies the Alwand refinery, since it is unlikely that the oil resources in and near this field can be developed to such an extent that investment in a pipeline for export of the crude would be warranted.

Cotton and Rayon Textiles

In 1947, a cotton spinning and weaving mill was started near Baghdad, with a pilot plant consisting of 5,000 spindles and 84 automatic looms. The second stage, which is something over 70 percent complete, consists of 22,000 spindles and 500 automatic looms. The plant is modern in design and includes dyeing, printing and finishing equipment. About one half of the equipment has been in full operation for over a year, and shows good returns for an uncompleted plant which has not reached stabilized operation conditions. When completed and when operating on a full three-shift basis, it is expected that the spinning mill will produce 6,000,000 lbs. of yarn annually. Part of the spinning capacity is used in making yarn for sale to other small textile mills or even for home industries for weaving into cloth. In Mosul, for example, there are over 1,000 hand looms in various small home industries

[1] By an agreement reached in December 1951, the government took over ownership of the refinery, retaining the AIOC subsidiary provisionally as its operating agent.

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• 281 which depend entirely upon yarn from the new spinning mill, now that importation of yarn from abroad is no longer permitted. The total consumption of cotton yarn by these smaller mills and home industries is in the neighborhood of 1,500,000 lbs. per year. They also make rayon cloth from imported yarn, imports in 1950 being about 500,000 lbs.

The weaving capacity of the plant, consisting of 584 automatic looms when completed, will produce approximately 15 million square yards of cotton and rayon cloth per year. This is, however, less than one quarter of Iraq's normal annual requirements for all classes of cotton and rayon piece goods.

The industry would be in a far better position to meet domestic requirements if the cotton mill at Baghdad as well as the cotton and rayon weaving plant in Mosul could double their designed capacity and extend their facilities to make a wider range of products such as shirting and poplin. The finishing, printing, and dyeing departments should also be expanded. To put these additional facilities into full operation would take approximately four years and even then it would still be necessary to import considerable quantities of various types of textiles.

The Mission recommends that such an expansion program be undertaken. The total cost would be about ID 1,300,000, of which approximately ID 900,000 would be in foreign exchange, mainly in pounds sterling. As before, the Industrial Bank, working in conjunction with private capital, should arrange to finance the additional facilities. Since private capital will be available for participation, there appears to be no need for a wholly-owned government plant for which ID 1,000,000 has been set aside in the ordinary budget for 1951-52. The new facilities will require the employment of approximately 1,500 additional workers in the textile industry.

Woolen Textiles

Woolen textiles have been made for many years. The first modern textile mill was started approximately 30 years ago. This mill, like the cotton textile mill, has a greater spinning than weaving capacity, so that yarn is available for local use both in knitting and in weaving by hand looms. The plant is equipped to make a broad range of fine fabrics and, along with other smaller mills, is

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fully capable of meeting all of the requirements of domestic consumption with the possible exception of minor items of a special nature. The plant's present capacity is 500,000 meters of cloth and 50,000 kilos of yarn. Recent improvements and expansion have brought the woolen textile industry abreast of the needs of the country.

Leather

Until recent years, there was little modern tanning of hides, most of the hides being exported. Since the war, however, several tanneries have been constructed and are now producing leather of fair quality sufficient for most of Iraq's needs, with the exception of those grades required to make the higher quality shoes.

Tanneries are not showing the profits which were originally anticipated, largely because they have to use hides of very poor quality. In many cases, the hides have been cut during flaying, while in other cases they have not been well preserved. The tanneries also have not attempted to make use of waste products and in some cases do not split the hides, a practice which is essential to low cost production. However, once these various technical problems have been solved, the tanneries should be able to meet all of Iraq's needs.

Shoes

Nearly 90 percent of Iraq's shoes are made by hand in numerous small home industries. There is one fairly modern factory, however, which, using both local and imported leather, now makes over 30,000 pairs of high grade shoes per year. The company has also set up retail outlets in all of the provinces. An increase in the capacity of this plant would do much to reduce shoe prices to the ultimate consumer. Annual production could be raised to 100,000 pairs by the procurement of additional equipment costing approximately ID 50,000, of which ID 45,000 would be in foreign exchange, mostly in Swiss francs. These facilities could be put into operation within two years and would increase employment from approximately 40 to 120 workers.

Vegetable Oil and Soap

A vegetable oil extraction plant has been in successful operation for approximately three years. It is designed to extract oil

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Machine Shop

392 There are about 150 very small machine shops in Baghdad. The total labor force in these shops is approximately 400. They do various types of metal work but by far the most important is the normal maintenance work on more than 3,000 diesel-driven irrigation pumps. While the workmanship is good, costs are very high because of the heavy overhead.

All of this work could be readily accomplished in one small, modern machine shop equipped with metal fabricating facilities, electric repair shops and including a modern foundry. With such facilities, not only could maintenance work on irrigation pumps and engines be carried out, but completely new diesel-driven pumps could be manufactured, replacing those now imported. It would, of course, be necessary to import special items such as fuel pumps, bearings and gears. Likewise, the design should be obtained through a license arrangement with some international firm. This plant would reduce the cost of present maintenance work by about one third and constitute the beginning of a modern equipment manufacturing concern. The shops thus replaced could be moved to rural areas to handle local automotive and agricultural machinery repairs.

The cost of such a machine shop would be about ID 600,000, including ID 500,000 of foreign exchange, mostly pounds sterling. It should be financed by private capital in conjunction with the Industrial Bank.

Jute Mill

● 288 [439] Jute products such as sacks, hessian cloth and twine are now being imported at the rate of about ID 384,000 per annum. The demand for such products is increasing and appears to be large enough to warrant establishment of a jute industry, even though the raw material will need to be imported. Ultimately it may even prove feasible to grow jute in Iraq.

The plant should be capable of making about 10,000 tons of jute products per year. The cost of such a mill would be about ID 500,000, including ID 400,000 in foreign exchange, mostly in pounds sterling. This mill could be financed by private capital and the Industrial Bank. It is recommended that it be located

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in Basra, close to both shipping and the agricultural area which may prove suitable for the growing of jute. It would employ about 300 workers.

Automobile Tires

The importation of automobile and truck tires is increasing at a rate of approximately 15 percent per annum, the value of all tires imported in 1950 being ID 468,000.

A plant of economic size to manufacture tires could be justified with a market of approximately twice that which now exists. Such a market will probably be reached in 1955. Since it would require approximately two years to construct a tire plant, it is recommended that plans be formulated to start such a plant in 1953.

The plant would be so designed as to utilize the maximum amount of labor and, accordingly, should cost no more than ID 750,000, including foreign exchange of ID 600,000, mainly pounds sterling. It could be financed by private capital with the assistance of the Industrial Bank. Foreign technicians would be required during the first years of its operation.

Salt

Geophysical work gives conclusive evidence of a very large salt dome near Basra. Unfortunately, the analysis is not known. This dome could be the source of very cheap salt for both export and domestic consumption. It might make feasible the establishment of an alkali plant, particularly since the nearby oil field would be able to furnish gas as a source of cheap power. It is recommended, therefore, that core drilling of this dome be started as soon as possible to permit a proper evaluation of the possibilities of its use.

Sugar Mill

Considerable thought has been given to the recommendation of a sugar refinery. Such an enterprise would, of course, have to depend on agriculture to supply the raw material, either in the form of sugar beets or sugar cane. Since this cannot be assured at this time, it is recommended that the development of this industry be held in abeyance for the present.

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regions for which it acts as commercial outlet and exchange centre. These regions are:

(*a*) The plains of northern Assyria, where there is a dense agricultural population.

(*b*) The hills of Kurdistan, occupied by shepherds practising transhumance.

(*c*) The steppes of the Jezireh, where there is a mixed population of true nomads rearing sheep, cattle and draught animals; and sedentary farmers.

(*d*) The uplands of the Jebel Sinjar, where pastoralism and agriculture are carried on by the Yezidi.

As a result, there is extreme heterogeneity of peoples within the city. Arabs are in the majority, with smaller groups of Kurds, Christians, Jews, and Yezidi, most of whom speak their own languages. An important mediaeval textile industry (note the word *muslin*) has now disappeared, though coarser textiles using wool as a raw material are still produced in the bazaars, and a recent feature has been the introduction of artificial silk weaving. Mosul is also important for leather working—a reflexion of its position on the edge of the steppe. Manufacturing is, however, less important than trade: grain, timber, hides, and manufactured goods are exchanged, and there are long distance communications with Baghdad and south-east Turkey. Much of the produce from Turkey comes by kelek (page 364).

Basra is an agglomeration of small sites grouped along the western bank of the Shatt el Arab some 70 miles upstream from the Persian Gulf. Basra proper is situated on a small creek 2 miles distant from the Shatt el Arab, and the principal port is at Ashar, on the main river. Modern docks have also been constructed at Maqil, 4 miles upstream from Ashar, and since 1939, further development has taken place at Tanuma on the eastern bank of the Shatt el Arab, opposite Ashar. Because of the recession of the head of the Persian Gulf, the growth of the port is relatively recent, and dredging on a considerable scale is necessary to prevent silting of the channel. Basra handles the greater proportion of the foreign trade of Iraq, and is the centre of the date-growing region, being itself surrounded by date-groves. Dates form the chief item in its export trade. Second in importance amongst exports is grain, with wool, liquorice root, and hides as subsidiaries. Imports consist chiefly of manufactured goods (cement, cotton and woollen textiles, machinery), tea, and sugar. Basra can be reached by large ocean going ships, but about 10 per cent. of its commerce is still carried on in small native craft.

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about half of the world's total. However, Iraq's past output has been paltry compared to its potential. A year ago Iraq's oil was flowing at the rate of 160,000 barrels a day. The figure is now 185,000, and estimates are that it will jump to 440,000 before long. The handicaps have been transportation and political difficulty. Iraq's wells are hundreds of miles from the Persian Gulf or the Mediterranean Sea, which means pipelines have to be constructed. Before this year two pipelines were in operation from the Iraqi fields to Tripoli, Lebanon. A 12-inch pipeline to Haifa, Israel, has been put out of use since Iraq joined the Arab embargo of Israel. A new 16-inch line built almost to the Israeli border has never been completed for the same reason. Early this year one small new line was completed to the head of the Persian Gulf, which will have a capacity of about 40,000 barrels a day. The main addition is the 30-inch line to the Mediterranean just being finished. It runs to Banyas, Syria, and has a capacity of 280,000 barrels a day.

Mining is carried out by the Iraq Petroleum Company, owned by United States, Dutch, British, and French interests. Despite this diversified interest, there has been continuous trouble with reactionary groups in Iraq along the same lines, but less serious than those in Iran. Recently the Parliament approved a new oil contract which promises the Iraqi Government 50 per cent of profits before foreign taxes, and (from the western point of view) the political situation seems to have improved.[38]

COTTON TEXTILES

Until the erection of the Iraqi Spinning and Weaving Company mill in 1948, cotton was used primarily for filling mattresses, for upholstery work, and for the home industries. Around 2,600 bales of cheap raw cotton and cotton waste normally have been imported from India for this purpose. A small crop of unirrigated indigenous cotton raised in the north around Zakho goes into this market, too.

The Iraqi Spinning and Weaving Company in Baghdad doubled its capacity in 1951 and now has about 27,200 spindles and 580 looms, producing about 18 million yards and finishing 5 million yards annually. The company already has purchased more equipment to give a total of 39,000 spindles and 900 looms, capable of producing about 27 million yards of cloth annually. Several small mills weaving cotton and rayon and three small knitting mills are reported also.

The mill consumed 10,482 bales of cotton in 1951 and expects to use 15,000 bales in 1952. The cotton has been secured almost entirely from the domestic crop. A poor crop forced the mill to buy 1,500 bales from the United States in the early part of 1952, but this unusual situation is not expected to be repeated.

Funds authorized in the government budget for other cotton textile mills have not been expended, presumably because of the general opposition to government intervention in the field of private enterprise and because of the recent expansion in the Iraqi mill. This expansion was financed by the Industrial Bank, which owns about a third of the company's stock.

With this expansion the factory should be able to produce about 40 million yards of cloth annually, or about 60 per cent of the country's requirements of 70 million yards.

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[38] Carmichael, J. H., "Oil from the Middle East Hits a New High Mark," *New York Times*, March 23, 1952.

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COTTON IN IRAQ

Import duties on textiles are relatively modest—from 11 to 20 per cent ad valorem. However, at the insistence of the mills the government has completely embargoed importation of yarns up to count 40s and closely controls foreign exchange for imports of cloth.

Table 31

IRAQ: Textile Products Available for Home Use 1938, 1948, 1949, 1950, and 1951

Year and Item	Consumption	Net Imports: Yarn	Net Imports: Cloth	Available for Home Use	Population	Per Capita Availability
	1,000 Metric Tons				Millions	Pounds
1938						
Cotton		.6	6.0	6.6	4.0	3.7
Wool	3.0	.1	2.2	5.3	4.0	2.9
Rayon		.1	2.2	2.3	4.0	1.3
Total	3.0	.8	10.4	14.2	4.0	7.9
1948						
Cotton	.7	.5	7.5	8.7	4.9	4.0
Wool	5.0		.6	5.6	4.9	2.6
Rayon		.1	.2	.3	4.9	.1
Total	5.7	.6	8.3	14.6	4.9	6.7
1949						
Cotton	1.1	.1	6.9	8.1	5.0	3.5
Wool	5.0		.5	5.5	5.0	2.6
Rayon		.1	.6	.7	5.0	.3
Total	6.1	.2	8.0	14.3	5.0	6.4
1950						
Cotton	1.1		8.0	9.1	5.1	4.0
Wool	5.0		.5	5.5	5.1	2.8
Rayon		.2	.6	.8	5.1	.4
Total	6.1	.2	9.1	15.4	5.1	7.0
1951*						
Cotton	1.4		6.1	7.5	5.2	3.2

* Estimated from trade sources.

SOURCE: Food and Agriculture Organization of the United Nations.

AGRICULTURE

From the statistics it would appear that agricultural production has been going down in relation to the population and that considerable pressure is developing on the land. The Food and Agriculture Organization's reports, which are based on the official figures for the country, show reduced acreage, sharply declining yields, and lower consumption of food in the postwar compared with the prewar period. But the United States Agricultural Attache, who has lived in this general area for many years and is intimately familiar with agriculture, expresses the same skepticism about the Iraqi figures as he does about agricultural statistics in the other Middle East countries. It is his view, and that of a number of other local agricultural leaders, that these figures simply are not correct and that both the output and consumption have been maintained fairly well.

Iraq is normally self-sufficient in food. Occasionally, in years of poor crops small quantities of cereals are imported, but the country usually has a